Method for synthesis of aryl-carotenoids

Description of Technology: This invention is in the field of microbiology. More specifically, this invention pertains to a method for microbial production of aryl-carotenoid compounds.

Patent Listing:

1. **US Patent No. 7,186,523**, Issued March 6, 2007, "Method for synthesis of aryl-carotenoids"
http://patft.uspto.gov/netacgi/nph-Parser?Sect2=PTO1&Sect2=HITOFF&p=1&u=%2Fnetahtml%2FPTO%2Fsearch-bool.html&r=1&f=G&l=50&d=PALL&RefSrch=yes&Query=PN%2F7186523

Market Potential: Carotenoids are pigments that are ubiquitous throughout nature and synthesized by all photosynthetic organisms, and in some heterotrophic growing bacteria and fungi. Carotenoids provide color for flowers, vegetables, insects, fish and birds. Colors of carotenoids range from yellow to red with variations of brown and purple. As precursors of vitamin A, carotenoids are fundamental components in our diet and they play an important role in human health. Industrial uses of carotenoids include pharmaceuticals, food supplements, animal feed additives, and colorants in cosmetics, to mention a few.

Because animals are unable to synthesize carotenoids de novo, they must obtain them by dietary means. Thus, manipulation of carotenoid production and composition in plants or bacteria can provide new or improved sources for carotenoids.

The problem to be solved is to express a functional carotene desaturase (crtU) gene for the production of aryl-carotenoids in a heterologous host. Applicants have solved the stated problem by isolating the crtU gene from Brevibacterium linens and expressing the gene from a plasmid in the Rhodococcus erythropolis ATCC 47072 strain.

Benefits:

- Provides a new and improved source for carotenoids

Applications:

- Pharmaceutical industry, food supplements, animal feed additives, and cosmetics

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